

New Tools Against Thrombotic Disease

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Technology description

Novelty

This discovery is unique in targeting the molecular chaperones within the ER, to achieve decreased thrombin generation at the cell surface.

Description

Activation of prothrombin to thrombin is crucial in both physiological and pathological coagulation. The asset of this remarkable technology lies in the fact that it acts to prevent the very powerful coagulation factor, pro-thrombin, from ever reaching the cell surface. Thus, not only is there no conversion to the active molecule, thrombin, but the downstream activation, by thrombin, of several other vital coagulation cascade components is prevented. In this way, both the initialisation and stabilisation of clot formation is targeted.

This patented technology targets GRP78, a molecular chaperone of the endoplasmic reticulum and demonstrates a mechanism by which thrombin generation at the surface of endothelial cells is mediated, and can be manipulated.

The McMaster technology presents a significant step towards the treatment and management of pathological thrombosis and embolism.

Advantages

Decreasing cell surface thrombin reduces the risk of thromboembolic events

Currently, there are no therapeutic / pharmaceutical approaches for decreasing tissue factor procoagulant activity.

Preventing thrombin generation at the cell surface may be more successful than inhibiting its activity

Institution

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